nfant mortality is a particularly useful measure of health status because it both indicates current health status of the population and predicts the health of the next generation (NCHS, 2001). Infant mortality in the U.S. is defined as the death of an infant from time of live birth to the age of 1 year. It does not include still births. Overall infant mortality is composed of neonatal (less than 28 days after birth) and postneonatal (28 days to 11 months after birth) deaths.

This indicator presents infant mortality for the U.S. based on mortality data from the National Vital Statistics System (NVSS) based on death certificate data. The NVSS registers virtually all deaths and births nationwide, with data coverage from 1933 to 2005 and from all 50 states and the District of Columbia.

What the Data Show

In 2005, a total of 28,440 deaths occurred in children under 1 year of age, 504 more deaths than were recorded in 2004. Exhibit 5-15 presents the national trends in infant mortality between 1940 and 2005 for all infant deaths as well as infant deaths by gender and race (black and white). A striking decline has occurred during this time period, with overall infant mortality rates dropping from nearly 50 deaths per 1,000 live births in 1940 to under seven deaths per 1,000 live births in 2005. Beginning around 1960, the infant mortality rate has decreased or remained generally level each successive year through 2005. From 2000 to 2005, infant mortality rates were 6.8 (2001 and 2004), 6.9 (2000, 2003, and 2005), and 7.0 (2002) per 1,000 live births. Infant mortality rates continue to be highest among black males and lowest among white females, although this gap has been decreasing over time.

The infant mortality rate for blacks decreased from 14.6 per 1,000 live births in 1999 to 13.7 per 1,000 live births in 2005. However, this is still twice the rate compared to white infants, which ranged from approximately 5.7 to 5.8 per 1,000 live births between 1999 and 2005. Infant mortality rates among Hispanic infants have changed little since 1999. In 2005, the infant mortality rate for Hispanic infants was 5.8 per 1,000 live births; slightly higher than the 5.6 per 1,000 live births reported in 2004 (NCHS, 2008). (Data not shown.)

In the U.S. in 2005, the 10 leading causes of infant mortality accounted for nearly 68 percent of all infant deaths, with the subgroup consisting of congenital anomalies (i.e., congenital malformations, deformations, and chromosomal abnormalities) having the highest rate at nearly 1.3 per 1,000 live births. This category alone accounts for approximately 20 percent of all infant deaths in 2005 (Exhibit 5-16). In 2005, the 10 leading causes remained nearly the same as those in 2004, with the following exceptions: complications of the placenta, cord, and membranes and unintentional injuries reversed order

Exhibit 5-15. Infant mortality rates in the U.S. by race and sex, 1940-2005[a,b]
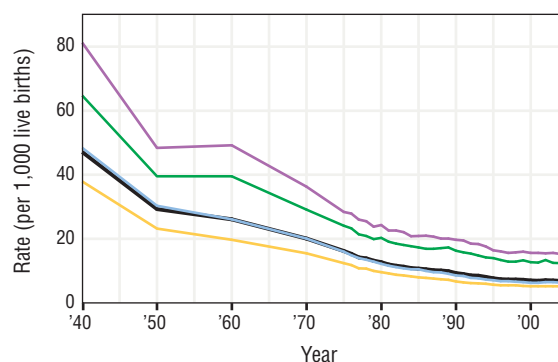
[a]Race was reported based on the race of the child (1940-1979) or the race of the mother (1980-2005).

[b]Annual infant mortality rates are not available prior to 1975 in published sources. Trends presented from 1940-1974 are based on data published for 1940, 1950, 1960, and 1970.

Data source: NCHS, 2008

with each other; and necrotizing enterocolitis of newborns increased by 23.4 percent replacing diseases of the circulatory system as the tenth leading cause of infant death. The increase in necrotizing enterocolitis is likely attributed to a change in coding rules, which resulted in this disorder being selected as the underlying cause of death more often than was previously the case (NCHS, 2008).

Congenital anomalies were generally ranked highest among the different racial groups. However, the leading cause of infant mortality among blacks was short gestation and low birthweight, followed by congenital anomalies. There were few differences in the leading causes of infant mortality between Hispanics and non-Hispanic white infants. In addition, the Centers for Disease Control and Prevention (CDC) report a substantial difference in the leading causes of death during the neonatal versus the postneonatal periods. Disorders related to short gestation and low birthweight were the leading cause of death for neonates and sudden infant death syndrome was the leading cause of death for postneonates, based on 2004 data (NCHS, 2007). (Data not shown.)

Indicator Limitations

• Cause of death rankings denote the most frequently occurring causes of death among those causes eligible to be ranked. The rankings do not necessarily denote the causes of death of greatest public health importance. Further, rankings of cause-specific mortality could change depending on the defined list of causes that are considered

Exhibit 5-16. Leading causes of infant death in the U.S., 2005[a]

Cause of death	Number of deaths	Percent of all infant deaths[b]
Congenital malformations, deformations, and chromosomal abnormalities	5,552	19.5
Disorders related to short gestation and low birthweight	4,714	16.6
Sudden infant death syndrome (SIDS)	2,230	7.8
Newborn affected by maternal complications of pregnancy	1,776	6.2
Newborn affected by complications of placenta, cord, and membranes	1,110	3.9
Accidents (unintentional injuries)	1,083	3.8
Respiratory distress of newborn	860	3.0
Bacterial sepsis of newborn	834	2.9
Neonatal hemorrhage	665	2.3
Necrotizing enterocolitis	546	1.9
All other causes	9,070	31.9

[a]"Infant deaths" are those occurring before the age of 1.

[b]Totals may not add to 100% due to rounding.

Data source: CDC, 2008

and, more specifically, the types of categories and subcat-egories that are used for such rankings (NCHS, 2005).

- Mortality rates are based on underlying cause of death as entered on a death certificate by a physician. Incorrect coding and low rates of autopsies that confirm the cause of death may occur. Additionally, some individuals may have had competing causes of death. "When more than one cause or condition is entered by the physician, the underlying cause is determined by the sequence of con-ditions on the certificate, provisions of the ICD [Interna-tional Classification of Diseases], and associated selection rules and modifications" (CDC, n.d.). Consequently, some misclassification of reported mortality might occur as a result of these uncertainties, as well as the underre-porting of some causes of death.

Data Sources

Infant mortality data were obtained from a published report by CDC's National Center for Health Statistics (NCHS, 2008), which provides annual natality data back to 1975 and decadal data for 1940, 1950, 1960, and 1970. Data in the NCHS report are based in part on unpublished work tables, available on the NCHS Web site at http://www.cdc.gov/nchs/deaths.htm. Leading cause of infant death data were extracted from CDC's Web-Based Injury Statistics Query and Reporting System (WISQARS) (CDC, 2008) (http://www.cdc.gov/ncipc/wisqars/), with supporting documentation from NVSS reports (NCHS,

2008). The underlying data in WISQARS come from CDC/NCHS annual mortality data files.

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